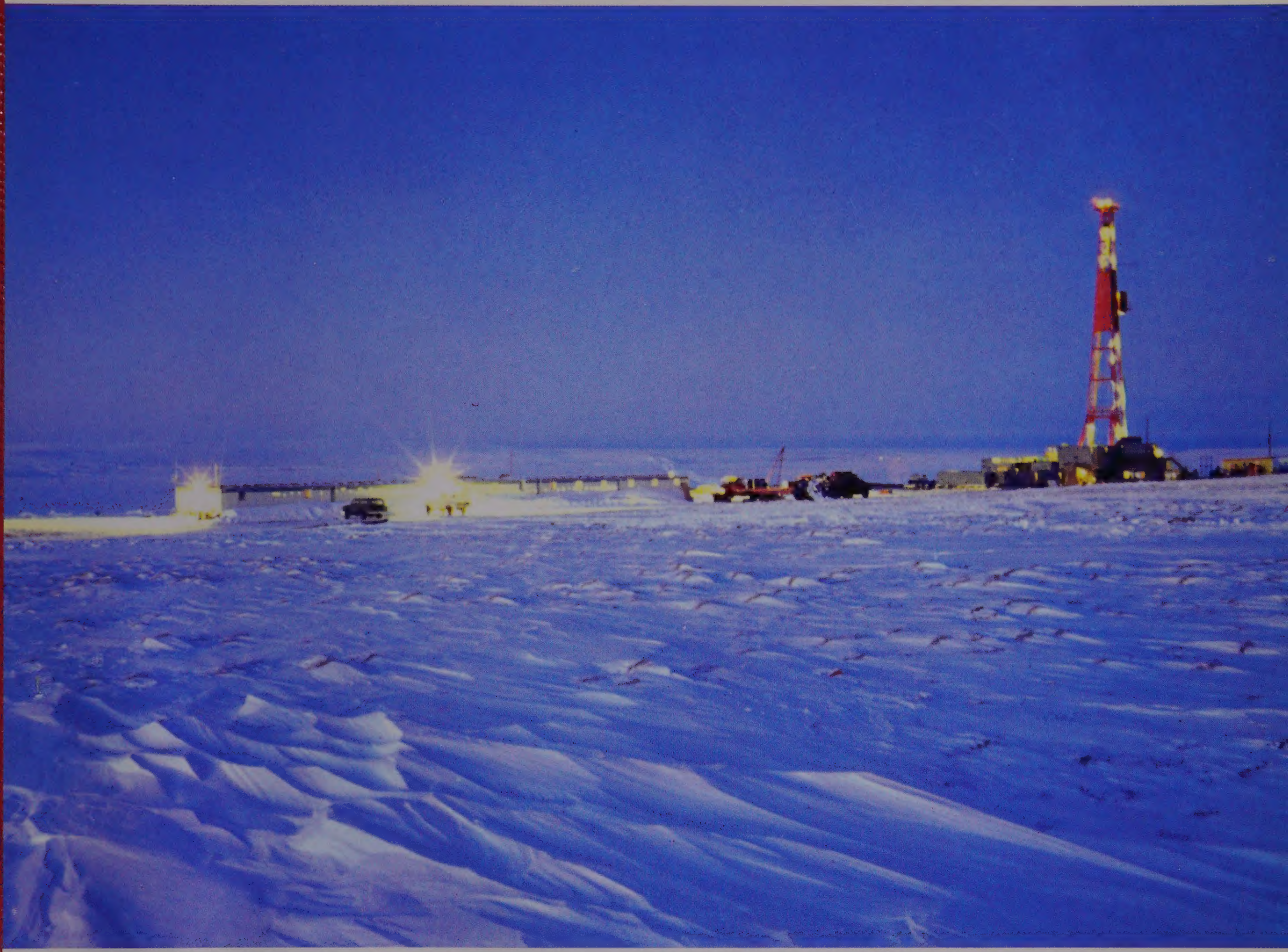
OIL RUSH TO ALASKA

Though interest runs high in Alaska's wildcats this winter, old hands caution this is no time to lose your cool —even in this sub-zero weather



merican is drilling two tight holes—both of great interest—in Alaska this winter. This well is the Kavik No. 1, being drilled
North Slope 60 miles southeast of the 1968 discoveries at Prudhoe Bay. The second is David River No. 1, located near the end
Peninsula. Results of both wells will remain confidential for some time after completion this spring.

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R: Here on the windswept steppes of Alaska's frozen North Slope, Pan Am is drilling the Kavik No. 1 about 60 miles southeast of the dis-
at Prudhoe Bay. Far to the southwest near the end of the Alaska Peninsula, we are drilling another important tight hole at David River.

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ABOVE: *Alaska's far reaches create immense problems of supply and supervision for our Anchorage staff. The map shows why. Anchorage, at Darlene Holtz' left hand, and Kavik, at top of map, are separated by 620 frozen miles. At other end of tape held by our drilling supervisor, N. E. Shackelford, is David River—640 miles in the other direction. Without roads, air support is a necessity.*
LEFT: *The rugged Hercules, shown loading during an ice fog at Fairbanks, hauls millions of pounds of heavy materiel, drilling rig and all, to the Slope—weather permitting.*

The TIME was mid-January.

The PLACE was Anchorage, Alaska . . . the third floor, First National Bank Building . . . the Pan Am office of N. E. (Shack) Shackelford, Anchorage area drilling supervisor.

Out of Shack's window it was the kind of winter day that Alaskans enjoy, only about 15° below and no wind. The sun shimmered on the ice pans of the Cook Inlet as they moved with the tide. Anchorage, long ago recovered from its '64 earthquake, shows few remnants of its former frontier flavor. With over 115,000 population today, Anchorage is the bustling oil capital of Alaska. The city —only about 15,000 people after World War II—is a showcase of what happens when a city becomes a headquarters for a major regional oil play requiring hundreds of millions of dollars in new investment. Anchorage was humming this January day.

If you were not well versed in the logistics of a wilderness wildcat drilling program, you could be excused for thinking that things were moving with the same smooth tempo out in the field as they were in Anchorage. In and out baskets were well tended; typewriters clacked.

But this outward serenity in our Anchorage office masked the true picture of what was going on at our remote operations. Alaska always has a way of writing its own script. This is especially true when you are drilling two such unusual and widely separated exploratory tests as the David River No. 1, 640 miles down the Alaska Pen-

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Our David River location, often a warring ground for storms from Bristol Bay, is nevertheless usually 30 to 50 degrees warmer than Fairbanks or North Slope. Significance of this remote wildcat is its location. It is only 20 miles across the Peninsula to ice-free Pacific—if we find oil.

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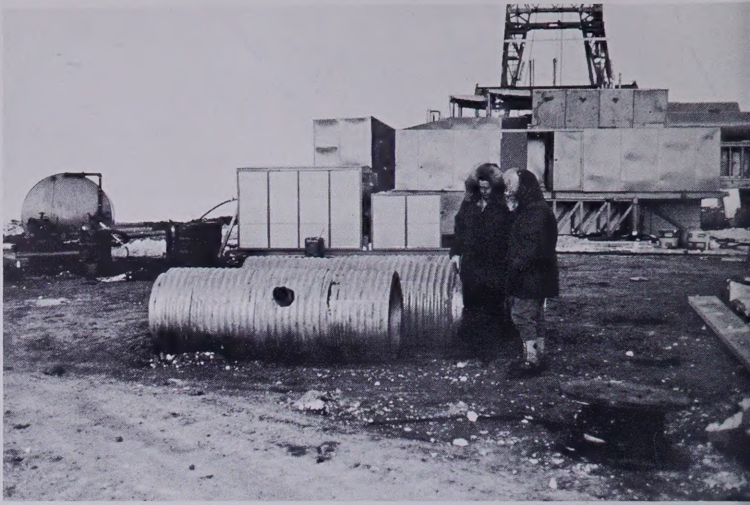


The South 48 will rarely see an insulated rig like this. With a torrent of hot air pouring from pipe just smaller than wind tunnel, foreground, men can keep warm enough in sub-zero weather. Here Paul Ledbetter and Jim McMasters, Pan Am field foremen at our North Slope well, inspect rigging-up process.

insula, and Kavik No. 1, 620 miles in the other direction.

The unmistakable clue that all was not what it appeared to be was the fact that the radio receiver on Shack's desk was quiet. No one was getting through. No reports; no questions; no requests for advice . . . just silence. Typically, Alaska's script this day was "something else."

This is what was really happening:

At David River it was a mild 20° above with only a 20-mile breeze—thus a chill factor of only about minus 10°. But there was also fog. Our geologist, trying to make his regular checkup on this tight hole, and the food plane with fresh supplies were both weathered in at Cold Bay about 50 miles away. Nor were the prospects good for flying to the rig. One of Bristol Bay's innumerable storms was on its way. To make matters worse, the casing in the well had collapsed.

At Kavik, over 1,200 miles northeast, it was 40° below. The weather advisory from the Slope had it that everything was socked in, visibility 200 feet. As it turned out, however, the weather report was from Prudhoe Bay, 60 miles to the northwest on the coast, and our own airstrip had visibility unlimited. But who could be sure; radio communications with Kavik were dead . . . probably the victim of playful northern lights. Our field foreman, Paul Ledbetter, already two days beyond his relief, continued to wait for his replacement, Jim McMasters, who was due in from Anchorage.

At Fairbanks, halfway from Anchorage to Kavik and the marshalling point for our airlift of heavy drilling equipment to the North Slope, the thermometer remained in its deep freeze. It had averaged minus 44° since New Year's. So the ice fog that grips the city on frigid days like these continued to immobilize the huge Hercules planes that make the airlift possible, and tons of supplies for Kavik waited another day at the airport.

North of Livengood, about 60 miles above Fairbanks, the weather was at last report a lung-searing minus 52°. No one knew for sure; no one could get through. But at that temperature it was assumed—rightly, it was learned later—that the process of loading the 380 tons of casing onto our cat train headed for Kavik was still paralyzed. Shack's latest instructions had been, "Shut her down until it warms up to 45° below." Thus the train's big tractors and sleds that were to break trail over the 400 roadless miles to the Slope stayed in camp this side of the Yukon River. Like many other operations in the Far North, the cat train continued to defer to this, the toughest winter in recent Alaska history.

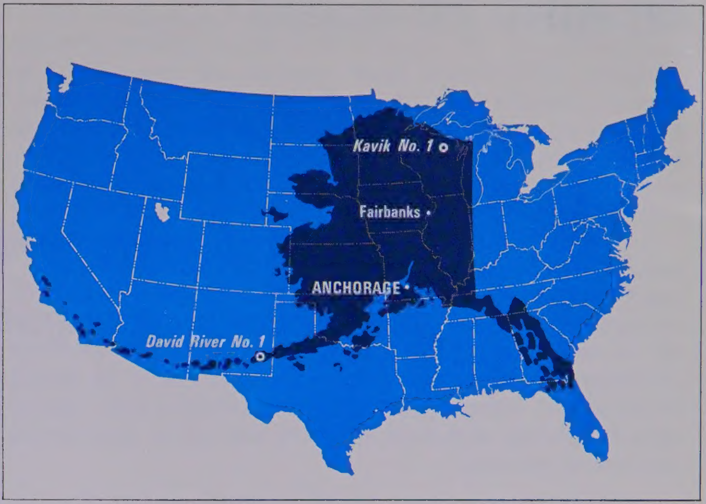
Altogether it was quite a script being written by Alaska on that mid-January day. Shack, a drilling expert with long experience, including our Cook Inlet operations, has had many days of frustration in recent years. He clamped a little more firmly on his unlit cigar and philosophized, "A man has to be pretty even minded in this country."

* * * *

For a person from "outside," as Alaskans put it, it is hard to visualize the difficulties that occur as a matter of course in Alaska's scattered operations. At locations like

Without roads to North Slope, we contracted to have 380 tons of casing sledded to Kavik via cat train. The big sleds and tractors break trail for over 400 miles over rivers and mountains. The train also hauls its fuel, "sleep and shop wanigans" and pipe from point 60 miles above Fairbanks. State of Alaska has put in winter road part of way to Slope this winter, but sleds avoid bulldozed road.

t remote, tight holes like our Alaska tests, we ave Pan Am men "sitting on the well" throughout a 7-day-on, 7-off cycle, on call 24 hours a day. our David River location are Bill Huckabee, eld foreman, and Terry Kirkpatrick, geologist.



Riding herd on our two wells from Anchorage is like being in Springfield, Mo. and directing drilling near Carlsbad, N. Mex. and Green Bay, Wis., except there are no roads, unsure radio communicatons, only uncertain bush flying.

David River and Kavik there are no roads; communications are unsure and frequently broken; the drill site airstrips are almost out of range from Anchorage, except for larger aircraft; the uninhabited desolation is almost total; there is seldom accurate weather information; and, finally, the weather is often brutal on men and equipment.

The effect of these environmental factors on oil exploration is profound. In Louisiana, the rule of thumb is that once you go offshore the costs of operation double or triple. In the Cook Inlet, however, they quadruple.

Out on the Slope they are as much as *ten times* the cost of land-based projects in the "Lower 48." As a result, a rank wildcat will cost anywhere from $2 million to $4 million. Before either David River or Kavik commenced drilling, each had already cost considerably more than $1 million apiece—and the Cook Inlet no longer held the title as the toughest drilling area in the world.

Why then explore in such remote places, especially in winter? An answer to the last part first. In summer the tundra is a watery mush, pockmarked with hummocks of moss and earth that push up out of the ooze. You can conquer the summer tundra, but building roads and airstrips is an expensive undertaking and would be impractical before significant discoveries would make construction economically sound. So in the Far North, the first phase of exploration is always begun when the tundra is cold, frozen solid.

The answer to the first part of the question—why work there at all?—involves a number of factors. First, America needs more and more oil to fuel its expanding economy. Experts forecast that if the United States is to find adequate oil for its own security in 1980, the industry must discover at least six billion barrels of new oil in place each year. However, our recent rate has consistently fallen slightly under five billion barrels. Consequently, the pressure to meet future demands continues to mount.

Second, to find the huge new reserves needed for the future, the oil explorer has in recent years intensified his search in the frontier, virgin exploration areas, both on- and offshore in the United States and Canada.

Third, Alaska has recently been the scene of significant, major discoveries. The string began with Swanson River in 1957. Then came the Cook Inlet in 1962. Last year produced the most encouraging news of all—the Prudhoe Bay field on the North Slope. There in the silent expanse beyond the Brooks Range came a find that may ultimately rank as one of the all-time largest in North America.

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David River No. 1 is located in tundra near north shore of Alaska Peninsula. When not frozen as it is here, lakes pockmark the mossy, treeless, squishy expanse. Hummocks push up through the water and ooze. Roads are difficult to build or maintain. Slope's tundra is flatter but similar.

The Far North presents immense, costly problems arising from weather, lack of communication and roads — but the oil search continues

Our cat train loaded near end of highway north of Fairbanks with pipe for our Kavik well. Over major rivers and two mountain ranges, the train broke trail to Kavik—over 400 wilderness miles. Sled here carried fuel for cats.

Hub of the oil rush to the Slope is Sagwon airstrip. "Sag"—from Sagavanirktok River—complete with travelers' rooms and cafeteria, took shape when original cat train from Fairbanks brought housing and equipment to build strip. Now scheduled stop of Interior Airways, men ferry from Sag to all Slope points.

Before day's work at Kavik, Ledbetter and contract toolpusher consult thermometer. Of one day—58 below and blowing snow—a crewman said, "It's almost too much for a man," but added gratefully, "I wasn't here New Year's when it was real cold."

What already was an important oil play in Alaska has now taken on the trappings of an "Oil Rush to the Far North." Among Alaskans, a fever reminiscent of the gold rush to Fairbanks at the turn of the century is building excitement all the way from the capital city of Juneau to the Eskimo village of Point Barrow on the Arctic.

However, seasoned oilmen caution that it is too early to justify "oil rush fever." Thus far in the recent activity, the industry has made only one discovery outside the Cook Inlet area itself. And it should also be remembered that while the developments of the last 10 years have pushed Alaska into the eighth-ranking position among oil producing states, its daily production is still no greater than that of Andrews County in West Texas. Furthermore, even the productive Cook Inlet fields are still years from paying out the hundreds of millions of dollars poured into them by the industry.

The sober fact is that, despite the excitement, Alaskan oil development is still in its infancy. As far as the Slope is concerned, the industry must await further developments before Alaska can know for sure whether, in fact, the hope of additional widespread oil discoveries is a reality or only a prospector's dream. At $2 million to $4 million per wildcat well, it will not take many dry holes to convince some exploration companies to pull back to less costly ventures.

Considerations like these temper the enthusiasm of even the most adventuresome explorationist. On the one hand are the hard economics involved in financing drilling operations that may be 10 times as costly as those in the Lower 48, a rate of capital outlay that makes it necessary to find huge reserves in order to break even. On the other hand, there is the lure of highly favorable geological con-

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ABOVE: *Kavik has modern, two-to-a-room quarters. Flown up in Hercules in complete 38-foot sections, hen laid out parallel with wide hall between, the camp is 204 feet long.* **RIGHT:** *Food is excellent and in great variety. Slope is too isolated for ordinary radio or TV, so only touch with outer world comes via occasional mail flown in with food.*

David River is eight miles inland from Bering Sea. Ice build-up makes forbidding shoreline. To drill here, we barged equipment from Anchorage, then pulled barge into a spit in the volcanic shore to provide permanent dock. Airstrip was built at left, then road to rig. From drill site, men can see across Peninsula to active Pavlof volcano flowing orange lava.

ditions, spiced by the possibility of finding fields of the Prudhoe Bay variety.

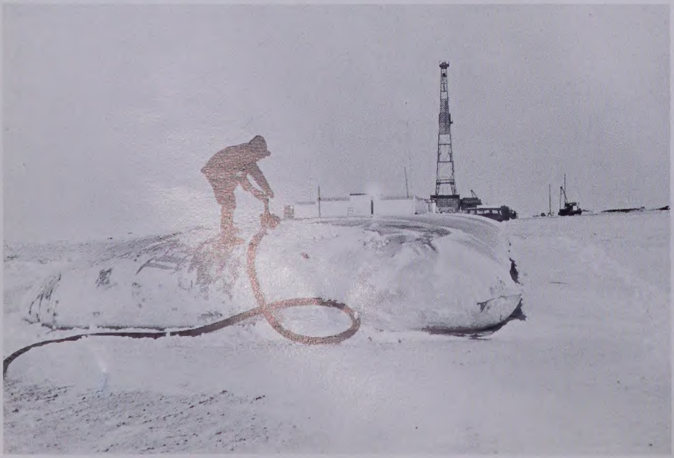
Oilmen have weighed alternatives like these many times before. No one knows better than they that a faint heart seldom leads to the big discoveries like the early-day Spindletops or the present-day Pembinas. Certainly discoveries will not be made in Alaska except by men with courage enough to take the risks.

Alaska's future will not come quickly, nor will it produce

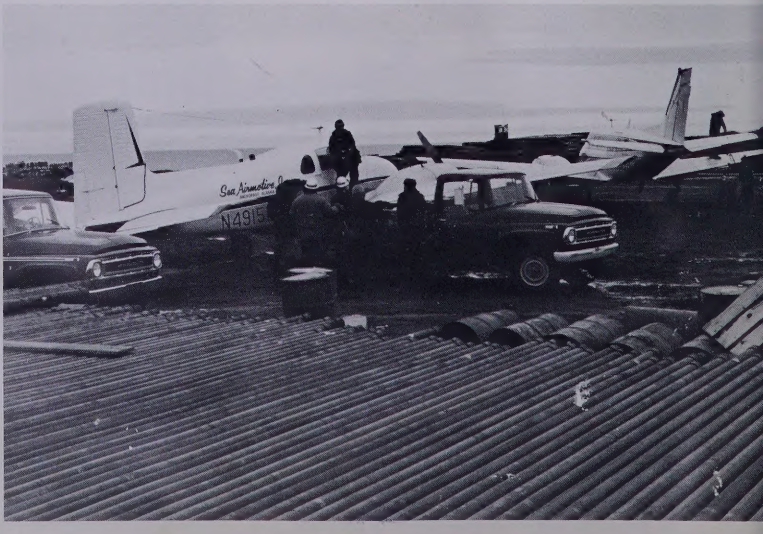
Isolated, forbidding, yet promising, Alaska's untouched reaches beckon the oil explorer, though th

ABOVE: *McMasters is masked for Arctic, whe wind often accompanies cold, making expos of skin dangerous. Fur is wolverine, which not frost up from warm breath.* **LEFT:** *The wind leaves the snow sculptured. A veteran of far northern oil operations, McMasters says temperatures are no lower than other places the North, "but with no trees to stop the wind, it seems colder."*

Rubber 50,000-gallon pillow tanks store Kavik fuel. Camp has 39 people, including dirt and drilling crews, pilot, cooks. As usual, horizon, left, is almost indistinguishable.



At David River, pipe for well lines our airstrip. Men are unloading semi-weekly food plane. With Pacific so near to Bering Sea at this point, fog and storms are frequent, and the airstrip is often weathered in.



the unmixed bonanzas that many think it will. The long odds and the heavy expenses are too great for that. But oil discoveries there will be. Whenever enough incentives exist, when the geology is right and when the markets demand it, men will look for oil.

Pan American, already a well-known explorer and producer in Alaska, expects to register its share of the future finds there. If our present drilling program comes up dry, as well it may, more projects are planned. Where? Perhaps in places far from any that have yet felt the drill bit.

Perhaps some years hence, drilling may even extend to the offshore reaches above the Slope. As a matter of fact, as operator of a new seismic project which will also include 32 other participating companies, Pan Am is even now in the process of planning a preliminary geophysical "shoot" next summer in the cold waters of the Beaufort Sea in the Arctic Ocean.

Where next? Only time and incentive will tell. **END**

against him are long

Except for a few weeks of near total darkness, the Slope often displays a delicate beauty, seen only in the Far North. For several hours during the half daylight of the Arctic, soft pinks and golds paint the horizon and much of the sky, even though the sun does not rise. **LEFT:** *The sun finally inched over the horizon at Sagwon airstrip on January 17.* **BELOW:** *Men at Kavik meanwhile peered for a sign of the returning sun, but the Brooks Range hid it for a few more days. There was, however, the telltale sign of its presence in the "sun dog," a pink ray that shot above the horizon and moved southward with the sun. Kavik had last seen the sun itself on November 15.*

Standing on a scaffold so he can reach the controls of a big High Island sulfur producer, Operator Junior Boyd makes necessary adjustments.

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